




























MATERIAL HAZARDS

HAZARD SYMBOLS

HAZARDS

Eye	 H  M  L
Nose	 H  M  L
Mouth	 H  M  L
Hand	 H  M  L
Poisonous	
Explosive	
Corrosive	
Carcinogen	
Flammable	
Fatal	
Narcotic	
Allergies	
DO NOT USE	
Toxic Gas	
Death	
Medical	
Toxic	
Cuts	
Burns	

SAFETY PRACTICES

Wet Mop	
Ventilation	
Dustmask	
Gloves	
Wash hands	
Avoid Ingestion	
Proper Storage	
Goggles	
Avoid Flame	

COPPER ENAMELLING

1. CLEANING	2.146
2. KILN FIRING/TORCH FIRING	2.148
3. ENAMELS AND LUSTERS	2.148
4. POTASH	2.148
5. CLEANUP	2.148
6. CHIPPING	2.150
7. CLOSING	2.150

COPPER ENAMELLING

Care must be taken when cutting and filing metal. Sharp edges can easily cause deep cuts.

Use cutting tools, files, and drills correctly to avoid cuts and other injury.







Avoid inhaling dusts from steel wool in the cleaning process.

Dusts and powdered enamels may cause inhalation irritation. Pigments for colouring may be hazardous depending on the pigment involved. Use a dust mask when applying enamels.






DO NOT touch hot metal or tools used in removing metal from kiln. Let metal cool on a heat absorbant surface. DO NOT touch kiln elements when kiln is turned on.

Keep work area clean and free from flammable materials. Have an appropriate fire extinguisher available for immediate use.
















COPPER ENAMELLING

MATERIAL	SYMBOL	HAZARD
<u>COPPER ENAMELLING</u>		<u>GENERAL</u> Many of the hazardous chemicals used in preparing and firing enamels are the same as those used in preparing and firing ceramics and glazes Inhalation of enamel and spray is hazardous
<u>CLEANING METAL</u> Nitric acid nitrogen oxide gas	 H  H  H	Highly corrosive to eyes and skin Toxic nitrogen oxide gas may be released when pickling with nitric acid
Sulfuric acid sulfur dioxide		Burning and blistering of skin
Sparex sodium bisulfate		Corrosive to skin may cause dermatitis







COPPER ENAMELLING

SYMBOL	SAFETY PRACTICE * CLEAN-UP	ALTERNATIVES
	<p><u>GENERAL</u></p> <p>Maintain the same safety practices used in Ceramics:</p> <p>No eating, drinking or smoking in the studio</p> <p>Practice good housekeeping methods</p> <p>Wash hands carefully after working with materials</p> <p>Maintain standard fire prevention practices</p>	
	Use proper ventilation	
	Wear dust mask	
	AVOID creating and breathing dust	
	Wear goggles when mixing or handling acid solutions or spray	Use powdered pumice, water and steel wool to clean metal
	Place pickling baths under fume hood or beside slot vents	
	Cover when not in use	
	Wear gloves	








COPPER ENAMELLING

MATERIAL	SYMBOL	HAZARD
<u>KILN FIRING</u> <u>TORCH FIRING</u>		Thermal burns
<u>ENAMELS AND LUSTERS</u> Preparation and application	 H  H 	Inhalation, ingestion, and contact with particles may cause poisoning Respiratory allergies/ asthma
Gum tragacanth Use: flux	 M 	Skin allergies
Lead frits Raw lead		Lead poisoning
Nitrobenzene Used for making silver and platinum	 H 	May cause cyanosis, headaches, weakness, and chronic anemia
<u>POTASH</u>	 H  H  M 	Respiratory irritation may cause pulmonary edema Ingestion causes intense pain and damage to tissues Corrosive to eyes and skin May cause burns
<u>CLEANUP</u> Lacquer thinner Turpentine	 M  H	Respiratory irritation, pulmonary edema, poisoning See PAINTING







COPPER ENAMELLING

SYMBOL	SAFETY PRACTICE * CLEAN-UP	ALTERNATIVES
	Wear protective gloves Have fire extinguisher available	
	Wash hands after use	
	Paint with a brush rather than spray	
	AVOID USE	
	AVOID USE	
	AVOID USE	
	Use respirator Use with proper ventilation	Use denatured turpentine

COPPER ENAMELLING

MATERIAL	SYMBOL	HAZARD
<u>CHAMPLEVE</u> <u>ETCHING PROCESS</u> Nitric acid nitrogen oxide gas	  H 	Eye irritation and damage Toxicity of gas Corrosive to skin
<u>CLOISONNE</u> <u>SILVER SOLDERING</u> <u>PROCESS</u> Borax fumes	 M	Irritating to lungs
Fluorides Found in commercial soldering paste	 H	Toxic by inhalation See SILVERSMITHING
Cadmium Found in silver solder	 H 	Pulmonary edema Very poisonous, may cause death

COPPER ENAMELLING

SYMBOL	SAFETY PRACTICE * CLEAN-UP	ALTERNATIVES
<div>  <p>Wear goggles when handling and mixing acid solutions</p> <p>Always add acid to water</p> <div>  <p>Use proper venting</p> </div> <div>  <p>Wear gloves</p> </div> <p>Neutralize old acid baths with baking soda and flush with cold water for two minutes</p> <p>Use proper tongs for removing metal from acid</p> </div>		
<div>  <p>Use proper venting</p> </div>		Use copper wire which can be applied to a layer of clear enamel which will be held fast when fired, then fill the cloisonnes with enamel
<div>  <p>AVOID USE</p> </div>		
<div>  <p>AVOID USE</p> </div>		Use low fire solders that do not contain cadmium